

Patent Application No. 10/056,546

IN THE CLAIMS:

Please amend claims 1, 16, and 22, and add new claims 23-28 as follows:

1 Claim 1. (currently amended) Method for generating persistent
2 annotations of multimedia content, comprising one or more repetitions
3 of the following steps:
4 actively selecting examples of multimedia content to be
5 annotated by a user, wherein the examples of multimedia content are
6 selected based on at least one criterion for achieving a maximal
7 disambiguation result;
8 accepting input annotations from said user for said selected
9 examples;
10 propagating said input annotations to other instances of
11 multimedia content; and
12 storing said input annotations and said propagated annotations.

1 Claim 2. (original) The method of claim 1, wherein the step of
2 actively selecting is performed using a selection technique selected
3 from the group consisting of: deterministic and probabilistic.

1 Claim 3. (original) The method of claim 2, wherein the step of
2 actively selecting, which is performed deterministically or
3 probabilistically, is based on explicit models and feature
4 proximity/similarity measures, and returns one or more examples of
5 multimedia content to be annotated.

1 Claim 4. (original) The method of claim 2, wherein the step of
2 actively selecting, which is performed deterministically or
3 probabilistically, is based on implicit models and feature
4 proximity/similarity measures, and returns one or more examples of
5 multimedia content to be annotated.

1 Claim 5. (original) The method of claim 1, wherein an
2 optimization criterion for active selection includes one or more
3 criteria selected from the group consisting of: maximizing
4 disambiguation, information measures, and confidence.

1 Claim 6. (original) The method of claim 1, wherein the multimedia
2 content comprises one or more types selected from the group

Patent Application No. 10/056,546

3 consisting of: images, audio, video, graphics, text, multimedia, Web
4 pages, time series data, surveillance data, sensor data, relational
5 data, and XML data.

1 Claim 7. (original) The method of claim 1, wherein the input
2 annotations are created by a user with reference to a vocabulary.

1 Claim 8. (original) The method of claim 7, wherein the vocabulary
2 contains one or more items selected from the group consisting of:
3 terms, concepts, labels, and annotations.

1 Claim 9. (original) The method of claim 1, wherein the process of
2 creating input annotations by the user involves multimodal
3 interaction with the user using graphical, textual, and/or speech
4 interface.

1 Claim 10. (original) The method of claim 1, wherein the input
2 annotations are created by means of steps selected from the group
3 consisting of: creating new annotations, deleting existing
4 annotations, rejecting proposed annotations, and modifying
5 annotations.

1 Claim 11. (original) The method of claim 7, wherein the
2 vocabulary is adaptively or dynamically organized and/or limited by
3 the system or the user.

1 Claim 12. (original) The method of claim 9, wherein the
2 multimodal interaction involves speech recognition, gaze detection,
3 finger pointing, expression detection, and/or effective computing
4 methods for sensing a user's state.

1 Claim 13. (original) The method of claim 1, wherein the
2 determination of the propagation of annotations is made
3 deterministically or probabilistically and on the use of models for
4 each annotation or for joint annotations.

1 Claim 14. (original) The method of claim 2, wherein the models
2 are created or learned automatically or semi-automatically and/or are
3 updated adaptively from interaction with the user.

1 Claim 15. (original) The method of claim 2, wherein the models
2 are based on nearest neighbor voting or variants, parametric or

Patent Application No. 10/056,546

3 statistical models, expert systems, rule-based systems, or hybrid
4 techniques.

1 Claim 16. (currently amended) System for generating persistent
2 annotations of multimedia content, comprising:

3 means for actively selecting examples of multimedia content to
4 be annotated by a user, wherein the examples of multimedia content
5 are selected based on at least one criterion for achieving a maximal
6 disambiguation result;

7 means for accepting input annotations from said user for said
8 selected examples; means for propagating said input annotations to
9 other instances of multimedia content; and

10 means for storing said input annotations and said propagated
11 annotations.

1 Claim 17. (original) The system of claim 16 wherein the means for
2 actively selecting uses a selection technique selected from the group
3 consisting of: deterministic and probabilistic.

1 Claim 18. (original) The system of claim 17, wherein the means
2 for actively selecting, which uses a deterministic or probabilistic
3 technique, is based on explicit models and feature
4 proximity/similarity measures, and returns one or more examples of
5 multimedia content to be annotated.

1 Claim 19. (original) The system of claim 17, wherein the means
2 for actively selecting, which uses a deterministic or probabilistic
3 technique, is based on implicit models and feature
4 proximity/similarity measures, and returns one or more examples of
5 multimedia content to be annotated.

1 Claim 20. (original) The system of claim 16, wherein an
2 optimization criterion for active selection includes one or more
3 criteria selected from the group consisting of: maximizing
4 disambiguation, information measures, and confidence.

1 Claim 21. (original) The system of claim 16, wherein the
2 multimedia content comprises one or more types selected from the
3 group consisting of: images, audio, video, graphics, text,

Patent Application No. 10/056,546

4 multimedia, Web pages, time series data, surveillance data, sensor
5 data, relational data, and XML data.

1 Claim 22. (currently amended) A computer program product in a
2 computer readable medium for generating persistent annotations of
3 multimedia content, the computer program product comprising
4 instructions for performing one or more repetitions of the following
5 steps: actively
6 selecting of examples of multimedia content to be annotated by
7 a user, wherein the examples of multimedia content are selected based
8 on at least one criterion for achieving a maximal disambiguation
9 result;
10 accepting input annotations from said user for said selected
11 examples;
12 propagating said input annotations to other instances of
13 multimedia content; and
14 storing said input annotations and said propagated annotations.

1 Claim 23. (new) The method of claim 1, wherein the at least one
2 criterion includes an ambiguity level of the selected examples.

1 Claim 24. (new) The method of claim 1, wherein the at least one
2 criterion includes a confidence level of the selected examples, the
3 confidence level being inversely proportional to a distance of a new
4 feature of the selected examples from a separating hyperplane in an
5 induced higher dimensional feature space.

1 Claim 25. (new) The system of claim 16, wherein the at least one
2 criterion includes an ambiguity level of the selected examples.

1 Claim 26. (new) The system of claim 16, wherein the at least one
2 criterion includes a confidence level of the selected examples, the
3 confidence level being inversely proportional to a distance of a new
4 feature of the selected examples from a separating hyperplane in an
5 induced higher dimensional feature space.

1 Claim 27. (new) The computer program product of claim 22, wherein
2 the at least one criterion includes an ambiguity level of the
3 selected examples.

Patent Application No. 10/056,546

1 Claim 28. (new) The computer program product of claim 22, wherein
2 the at least one criterion includes a confidence level of the
3 selected examples, the confidence level being inversely proportional
4 to a distance of a new feature of the selected examples from a
5 separating hyperplane in an induced higher dimensional feature space.